WHAT IS CLAIMED IS:

1. A gas laser device, comprising:

a chamber for sealingly storing a laser gas therein;

a discharging electrode for exciting the laser gas through electric discharging, so that laser light is outputted from said chamber;

circulating means for circulating the laser gas within said chamber so that the laser gas passing an electric discharging region of said discharging electrode is circulated in said chamber and is returned to said electric discharging region of said discharging electrode; and

control means for controlling said circulating means so that said circulating means provides different gas circulation capacities, being different for an in-operation state in which the laser gas is excited by electric discharging from said discharging electrode and the laser light is outputted and for a stand-by state which differs from said in-operation state but in which laser light can be outputted.

2. A gas laser device according to Claim 1, wherein said control means is operable to stop the gas circulation through said circulating means when said gas laser device is in said stand-by state.

3. A gas laser device according to Claim 2, wherein said circulating means includes a blowing machine provided within said chamber.

4. A gas laser device according to Claim 3, wherein said blowing machine has a blowing blade rotatably supported within said chamber.

5. A gas laser device according to Claim 1, wherein said laser device comprises one of a noble gas halide excimer laser and a F_2 laser.

6. A gas laser device according to Claim 5, wherein said noble gas halide excimer laser comprises one of XeCl excimer laser, KrF excimer laser, and ArF excimer laser.

7. A gas laser device according to Claim 1, further comprising an exposure apparatus for exposing a substrate with the laser light.

8. A gas laser device according to Claim 7, wherein said control means is operable to stop the gas circulation through said circulating means when said gas laser device is in said stand-by state.

9. A gas laser device according to Claim 8, wherein said circulating means includes a blowing machine provided within said chamber.

10. A gas laser device according to Claim 8, wherein said blowing machine has a blowing blade rotatably supported within said chamber.

11. A gas laser device according to Claim 8, wherein said laser device comprises one of a noble gas halide excimer laser and a F_2 laser.

12. A gas laser device according to Claim 11, wherein said noble gas halide excimer laser comprises one of XeCl excimer laser, KrF excimer laser, and ArF excimer laser.

13. An exposure apparatus, comprising:

a laser light source having (i) a chamber for sealingly storing a laser gas therein, (ii) a discharging electrode for exciting the laser gas through electric discharging so that laser light is outputted from said chamber, and (iii) circulating means for circulating the laser gas within said chamber so that the laser gas passing an electric discharging region of said discharging electrode is circulated in said chamber and is returned to said

electric discharging region of said discharging electrode;

a main assembly for exposing a substrate with the laser light from said laser light source; and

control means for controlling said circulating means so that said circulating means provides different gas circulation capacities, being different for an exposure-operation state of said exposure apparatus in which exposure of the substrate with the laser light from said laser light source can be performed through said main assembly, and for a non-exposure-operation state of said exposure apparatus.

14. An apparatus according to Claim 13, wherein said control means is operable to increase the gas circulation capacity of said circulating means in response to start of an exposure job in which the exposure operation is performed through said main assembly.

15. An apparatus according to Claim 14, wherein said control means is operable to hold gas circulation through said circulating means stopped before start of the exposure job.

16. An apparatus according to Claim 15, wherein

wherein said circulating means includes a blowing machine provided within said chamber.

17. An apparatus according to Claim 16, wherein said blowing machine has a blowing blade rotatably supported within said chamber.

18. An apparatus according to Claim 13, wherein said laser light source comprises one of a noble gas halide excimer laser and a F_2 laser.

19. An apparatus according to Claim 18, wherein said noble gas halide excimer laser comprises one of XeCl excimer laser, KrF excimer laser, and ArF excimer laser.

20. A semiconductor device manufacturing method in which a pattern is lithographically transferred onto a substrate by use of an exposure apparatus as recited in any one of Claims 7 - 19.